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APPRENTICESHIP TRAINING

RECREATION VEHICLE MECHANIC Program

Alberta

MANPOWER
Apprenticeship and Trade
Certification Division

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RECREATION VEHICLE MECHANIC TRADE

THE GOAL OF APPRENTICESHIP TRAINING

To develop a competent tradesman who, through skill and knowledge, is capable of installing and maintaining systems and equipment for the distribution and utilization of electricity for power and liquid propane gas for cooking heating and refrigeration.

THE PRODUCT OF APPRENTICESHIP—

a graduate who will:

- * know the standards and regulations of L.P. gas in order to provide the maximum safety.
- * be able to install and maintain pipe systems and equipment using propane gas.
- * be proficient in the safe use and maintenance of hand and power tools.
- * layout and install the various electrical circuits in a Recreation Vehicle.
- * be thoroughly familiar with the safety requirements for electrical installations.
- * use competently the test instruments and various tools necessary to perform tasks.
- * It is advantageous for a Recreation Vehicle Mechanic to familiarize himself with the work experience of closely allied trades; e.g. Gasfitter, Appliance Serviceman and Sheet Metal Mechanic.

RECREATION VEHICLE MECHANIC APPRENTICESHIP INFORMATION

Basic Requirements:

- * Indenture for 2 periods of Trade experience.
- * Attend an 8 week technical training course in the first and second periods.
- * Fulfill the requirements for each period including 1800 hours of work experience inclusive of time spent at the training course; successfully complete the technical training course and obtain a satisfactory employer's report.
- * Education — a minimum requirement is the completion of grade 9 or a pass on an equivalent entrance examination as prescribed by the Trade Regulation.
- * Age — the minimum age for apprentices is 16 years. There is no upper age limit.

Credits:

- * Accelerated patterns of apprenticeship may be granted for related technical training and/or experience.

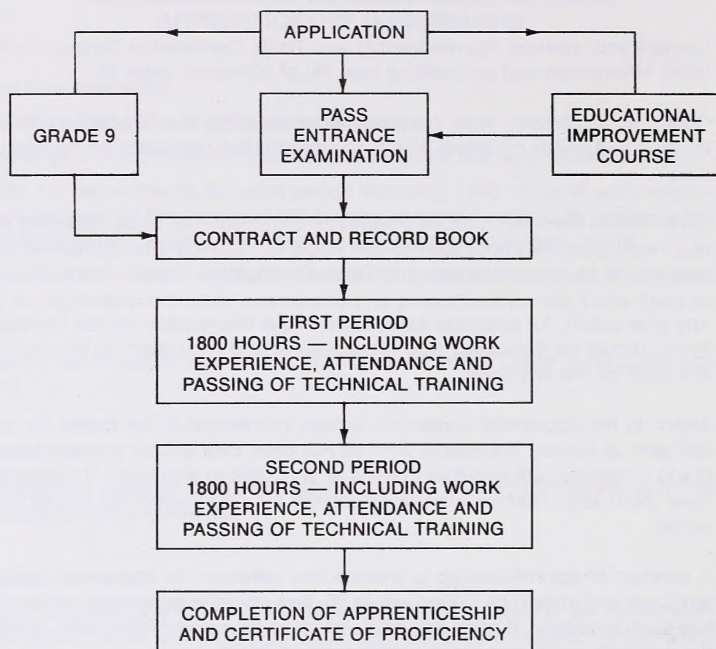
Benefits:

- * Apprenticeship is a learning-while-earning program. During the apprenticeship period, while working at the trade, apprentices are assured by regulation of a minimum percentage of the prevailing journeyman rate: 55% during the first period, 75% during the second period. Progress from one rate to the next takes place only after successful completion of all the requirements for each period (details are outlined in the Record Book).
- * All apprentices 16 years of age and older are normally eligible for training allowances while attending technical training courses. These allowances are funded by the Canada Employment and Immigration Commission.
- * Administrative procedures establishing the amount of training allowance is complex and can vary with an individual's circumstances. Contact a local Canada Employment Centre for details.
- * An apprentice who successfully completes the program will graduate with an Alberta Completion of Apprenticeship Certificate and a Certificate of Proficiency.
- * The most significant benefit to the graduate apprentice is that he is well trained in technical and practical aspects of the trade and is able to make a worthwhile and productive contribution to society. Society in return, will provide an opportunity for livelihood.

DIRECTIONS FOR PROSPECTIVE APPRENTICES

- * Contact your nearest Apprenticeship and Trade Certification Division for detailed information and counselling (see list of offices on page 19).
- * Obtain an application form from the Apprenticeship and Trade Certification Division and neatly complete, in full, the information requested of the apprentice.
- * Persevere in the search for apprentice employment and upon obtaining employment, give the application to the employer. It should be completed and returned to an Apprenticeship and Trade Certification Division forthwith.
- * Any time credit, for previous experience in the Recreation Vehicle Mechanic trade, should be discussed with the employer and requested on the application form by the employer.
- * Attach to the apprentice application a copy (transcript) of the marks for your last year of school. Applicants who do not have their school transcripts or a grade 9 standing are required to write an entrance examination. If transcripts have been lost, contact Alberta Education for information on school transcripts.
- * A contract of apprenticeship is entered into between the apprentice and the employer and should be signed within 90 days after the apprentice application has been approved. If contracts have not been issued within this time, contact the Apprenticeship and Trade Certification Division.
- * Before signing the contract of apprenticeship read the complete document carefully — know your obligations and responsibilities to your employer — know the employer's obligations and responsibilities to you — feel confident you have selected the right occupation.
- * Know when you will be expected to attend classes and be prepared to attend. In early May of each year, School Schedules are sent to you and your employer. The employer also receives a class selection card for you, which is to be completed and submitted for scheduling. Information on procedures also accompanies the above. Confirmation on the date you actually get scheduled and/or the Official Notice will follow at the appropriate time(s).
- * Prepare in advance for the financial obligations required of you during school training. Reference materials and school supplies are paid for by the apprentice.
- * While an apprentice, it will be your responsibility to respond promptly to mailed directions and requests from the Apprenticeship and Trade Certification Division.

APPRENTICESHIP ROUTE TOWARD CERTIFICATION



APPRENTICESHIP COMMITTEE STRUCTURE

Recreation Vehicle Mechanic Provincial Apprenticeship Committee

The Provincial Apprenticeship Committee for the Recreation Vehicle Mechanic Trade is comprised of members from Local Apprenticeship Committees from the cities of Edmonton and Calgary.

This Committee is concerned with the policies that guide the program and make recommendations to the Apprenticeship and Trade Certification Board and the Director of Apprenticeship and Trade Certification Division in the following areas:

- * Contribute current information relative to changes in the trade and requirements of industry.
- * Make recommendations for changes to existing Trade Regulations.
- * Assist in updating of the training program through recommendations for revisions to the course outline and attendant examinations.

Recreation Vehicle Mechanic Local Apprenticeship Committee

Local Apprenticeship Committees are concerned with individuals and trade situations within a local region. Meetings are held throughout the year to make recommendations and to discuss problems relating to the apprenticeship program. Members who serve on committees are nominated by employer and labour organizations, and membership is equally divided into employer and employee representation in accordance with The Manpower Development Act.

Apprenticeship Committee Members:

Mr. V. Bateman — Calgary — Employee
Mr. H. Phillips — Calgary — Employer
Mr. J. Saltys — Calgary — Employee
Mr. D. Shepherd — Calgary — Employer
Mr. B. Bailey — Calgary — Employee (Alternate)
Mr. D. Markowsky — Calgary — Employer (Alternate)
Mr. S. Braaksma — Edmonton — Employee
Mr. R. Clissold — Edmonton — Employer
Mr. G. Hodgins — Edmonton — Employer
Mr. J. Mugridge — Edmonton — Employee
Mr. T. Hobbs — Edmonton — Employee (Alternate)
Mr. L. Nyback — Camrose — Employer (Alternate)

RECREATION VEHICLE MECHANIC PROGRAM COURSE OUTLINE

This outline has been prepared in accordance with recommendations from the Provincial Apprenticeship Committee for the Recreation Vehicle Mechanic Trade in the Province of Alberta.

The outline was updated following consideration given to recommendations and suggestions from:

- Local Apprenticeship Committees
- Representatives from training institutes
- Curriculum Sub-Committee from the Provincial Apprenticeship Committee

PROCEDURES FOR RECOMMENDING REVISION(S) TO THE COURSE OUTLINE

Any concerned citizen or group in the Province of Alberta may make recommendations for change by writing to Apprenticeship and Trade Certification Division, Edmonton.

It is requested that recommendations for change refer to specific areas and state references used. Recommendations received will be placed before regular meetings of the Provincial Apprenticeship Committee.

PREFACE

The lectures, demonstrations and assignments listed in the course outline are intended to familiarize the Recreation Vehicle Mechanic apprentice with the scope of his trade and to train him in necessary skills. Classroom subjects were carefully chosen to relate to the skills required in modern Recreation Vehicle program and are minimal requirements.

- * The Recreation Vehicle Mechanic, must use materials, make installations and critical connections in accordance with specifications and designs. The apprentice must acquire the knowledge and skills necessary to cope with present day requirements.
- * The subjects of mathematics and technical information have been determined to be necessary components of technical training when applied in terms of trade knowledge.
- * The hours allotted for various subjects are intended as guides. Some flexibility in accommodating special circumstances such as statutory holidays is anticipated.

Metric Statement and Occupational Health should also be included.

SAFETY EDUCATION

Safe working procedures and conditions, accident prevention and the preservation of health is of primary importance in the Apprenticeship programs in Alberta. These responsibilities are shared and require the joint efforts of the government, employers, employees and the general public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm and that safe learning experiences and environment can be created by controlling the variables and behaviors that may contribute to or cause an accident and/or an injury.

It is generally recognized that a safe attitude contributes to an accident free environment. As a result a healthy safe attitude towards accidents will benefit an employee by helping to avoid injury, loss of time and loss of pay.

A tradesman is possibly exposed to more hazards than any other person in the work force and therefore, should be familiar with the Occupational Health and Safety Act and Regulations dealing with his own personal safety and the special safety rules applying to each job.

LEGAL AND ADMINISTRATIVE ASPECTS

Employer's Responsibilities:

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer. The company is responsible for:

1. The provision and maintenance of safety equipment
2. The provision of protective devices and clothing (as required by the Occupational Health & Safety Act, General Safety Regulations)
3. The enforcement of safe working procedures
4. Adequate safeguards for machinery, equipment and tools
5. Observance of all accident prevention regulations
6. Adequate training to allow a worker to use or operate equipment in an effective and safe manner.

Government's Responsibilities:

The Apprenticeship and Trade Certification Division in conjunction with the respective Provincial Apprenticeship Committee assumes the responsibility to assure that adequate safety is reflected in the curriculum and that adequate safety instruction is presented at the training establishments.

The Occupational Health and Safety Inspection Branch assumes the responsibility for periodic inspection of the operation to ensure that regulations for industry are being correctly observed.

Individual's Responsibilities:

The employee is responsible for:

1. Knowing and working in accordance with the safety regulations pertaining to job environment and
2. Working in such a way as not to endanger himself or his fellow employees

The major factor in safety is the individual employee, his personal attitude toward safety and having an awareness of the respective safety regulation.

RECREATION VEHICLE MECHANIC PROGRAM

Subjects and Time Distribution

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Section Six:	New Developments		6	17

FIRST PERIOD TECHNICAL TRAINING

SECTION ONE: SAFETY, TOOLS AND SHOP EQUIPMENT

18 Hours

A. Workshop Safety

1. Occupational Health and Safety Regulations
2. Safe use of hand and power tools
3. Safe handling of paints, flammable and toxic materials
4. Proper ventilation, exhaust system regulations

B. The Metric (SI) System

1. Applied mathematics (RV oriented)
2. Calculating specifications and dimensions

C. Basic Hand and Power Tools

1. Care and use
2. Construction and minor service

SECTION TWO: CONSTRUCTION DETAILS

192 Hours

A. Undercarriage

1. Frame construction, standard and gooseneck
2. Axles and alignment
3. Springs
4. Rubber torsion suspensions
5. Wheels, bearings and seals
6. Electric brakes
7. Hydraulic brakes
8. Safety factors
9. Tires, construction, sizing, wear patterns, balancing, alignment
10. CSA specifications

B. Trailer Hitch Systems

1. Basic hitches
2. Weight distribution hitches
3. Sway controls

4. Safety chains
5. Tow vehicle hitch installation (Bolt-on type)
6. Fifth wheel hitch installation (Bolt-on type)
7. General Safety factors
8. Electric and mechanical jack systems

C. Basic Body Construction

1. Wood frame construction
2. Aluminum frames
3. Aircraft type construction
4. Fibre glass repair
5. Plastic repair
6. Preparation and painting
7. Glass installation
8. Door window and vent hardware
9. Dust and water leaks
 - (a) sealants
10. Insulation
11. Wall coverings
12. Exterior panels

D. Built-In Cabinets and Furniture

1. Counter tops
 - (a) adhesives
2. Woodwork
3. Drawers and doors
4. Upholstery
5. Vinyl repair
6. Carpet
7. Lamination

E. Appliance Removal, Installation and Support Systems

1. Propane safety
 - (a) codes
2. Secure and neat installation of:
 - (a) stoves
 - (b) ovens

- (c) exhaust hood
- (d) refrigerators
- (e) furnaces
- (f) fans
- (g) air conditioners
- (h) microwave ovens
- (i) hot water heaters
- (j) water pumps

F. Interior Lights and Wiring System (12V & 110V)

- 1. Basic electricity
- 2. Wire sizes
- 3. Fuses and breakers
- 4. 110 V - 12V converters
- 5. Fixture installation
- 6. Safe wiring practices
- 7. Monitor panels
- 8. Batteries
- 9. Battery chargers

SECTION THREE: AUXILIARY ELECTRICAL CONNECTIONS

18 Hours

A. Vehicle Lights and Brake Wiring Systems

- 1. Connections to towing vehicle
 - (a) transmission coolers
- 2. Camper connections (wiring)
- 3. Break-away brake control system
- 4. Auxiliary batteries (RV batteries)
- 5. Charging system isolators
- 6. Trailer brake controls
 - (a) electric
 - (b) hydraulic
- 7. Variable current resistors

SECTION FOUR: PRE DELIVERY

12 Hours

A. Checks Prior to Delivery

- 1. Leak test, adjust pressure, light and adjust appliances
- 2. Lights

3. Safety items
4. Wheel bearing service
5. Brake adjustment
6. Appliance operation
7. Water test
8. Others

B. Cleaning of Unit for Delivery

SECOND PERIOD TECHNICAL TRAINING

SECTION ONE:

PROPANE

36 Hours

A. Propane Systems

1. The nature of LPG's
2. Safety in handling
3. Propane storage vessels and cylinder inspection
4. Selling propane (handling)
5. Propane lines and fittings
 - (a) barbeque connections
6. Relief valves and regulators
7. Connecting and adjusting appliance burners
8. C.S.A. codes
9. Gas detectors

SECTION TWO:

BODY CONSTRUCTION

18 Hours

A. Camper Construction

1. Tie downs
 - (a) load capacities
 - (b) types
2. Chassis mount vs. slide-in
3. Jacking systems
 - (a) safe use off
 - (b) types
 - (c) load capacities

B. Motorhome and Trailer Body Construction

1. Basic body construction
2. Operator controls
3. Vehicle safety equipment
4. Exhaust systems
5. D.O.T. requirements and regulations

SECTION THREE:

APPLIANCES

90 Hours

A. Appliance Repair

1. Refrigerators
 - (a) absorption type
 - (b) compressor type

2. Stoves and ovens
3. Furnaces
 - (a) types
 - (b) thermostats
 - (c) venting
 - (d) safe installation
 - (e) orifice sizes
 - (f) component parts
4. Fans (Venting)
5. Air conditioners
6. Microwave ovens
7. Converters
8. Water heaters
 - (a) DSI (Direct Spark Ignition)
 - (b) manual
9. Water pump
 - (a) electric
 - (b) manual
 - (c) compressor type

B. Auxiliary Light Plants (APU's)

1. Service
2. Trouble shooting
3. Minor repairs and adjustments
4. Exhaust systems
5. Mountings
6. Electrical connections 12V and 110V
7. Installation procedures
8. Oil changes and fluid level checks

SECTION FOUR:

ACCESSORIES AND INVENTORY CONTROL

60 Hours

A. Accessory Attachments

1. Awnings
2. Wind deflectors
3. T.V. antennas and recepatacles
4. C.B. radios
5. Fire extinguishers

6. Cargo racks and ladders
7. Inflatable camper to cab seals
8. Bike and tire racks
9. Burglar alarm
10. Back-up safety buzzers
11. Power roof vent
12. Stereo, AM + FM cassette and speakers
13. Storage pods
14. Vacuum cleaners

B. Accessories, Detached

1. Catalytic heater
 - (a) approved types
 - (b) other types
2. Infrared heaters
 - (a) approved types
 - (b) other types
3. Toilets
 - (a) approved types
 - (b) other types

C. Parts Catalogues

1. Catalogue systems
2. Cross references
3. Microfiche
4. Work orders
5. Work behavior — courtesy

D. Estimating

**SECTION FIVE: PLUMBING AND
EXTERIOR CONSTRUCTION**

30 Hours

A. Water and Drain Systems

1. Pumps and pressure systems
2. Water heaters
3. Water storage and treatment
4. Water lines and valves
5. Holding tanks and treatment

6. Drain, sewer lines and traps
7. Venting
 - (a) tanks (moulding and supply)
 - (b) toilets
 - (c) vent — stack
8. Bathroom
 - (a) showers
 - (b) sinks and taps
 - (c) bath tubs
 - (d) toilet (all types)
 - (e) shower stalls
9. Kitchen sink
10. Monitor panel

B. Winterizing

1. Antifreeze type (non toxic)
2. Repairing damage from freezing
3. Preparation for winter, use e.g.
 - (a) storm windows
 - (b) insulation
 - (c) heat tapes
 - (d) boxing holding tanks

C. Siding Repair

1. Metal siding
 - (a) design
 - (b) removal and placement
 - (i) retaining methods
 - (c) repair
 - (d) insulation
2. Fiberglass siding
 - (a) repair
 - (b) removal and replacement
 - (i) retaining methods
 - (ii) material used

SECTION SIX:

NEW DEVELOPMENTS

6 Hours

SUGGESTED REFERENCE MATERIALS

TECHNICAL TRAINING SCHOOLS

The Recreation Vehicle Mechanic apprenticeship training program is offered by the Alberta Manpower, Apprenticeship and Trade Certification Division. Staff and facilities for teaching the program are supplied by Alberta Manpower at:

1. Southern Alberta Institute of Technology

LOCATION OF APPRENTICESHIP AND TRADE CERTIFICATION DIVISION REGIONAL OFFICES

CALGARY

EDMONTON

FORT McMURRAY

GRANDE PRAIRIE

HINTON

LETHBRIDGE

MEDICINE HAT

PEACE RIVER

RED DEER

VERMILION

GOVERNMENT OF THE PROVINCE OF ALBERTA

ALBERTA REGULATION 92/84

(Filed on March 16, 1984)

MANPOWER DEVELOPMENT ACT

MINISTERIAL ORDER

I, Ernie Isley, Minister of Manpower, pursuant to sections 30(2) and 37(2) of the Manpower Development Act, hereby make the Regulation in the attached Appendix being the Recreation Vehicle Mechanic Trade Regulation.

DATED at Edmonton, Alberta, this 14th day of March, 1984.

ERNIE ISLEY
Minister of Manpower

A P P E N D I X

MANPOWER DEVELOPMENT ACT

Recreation Vehicle Mechanic Trade Regulation

1(1) In this regulation,

(a) "Recreation Vehicle Mechanic" means a person engaged in the repair, maintenance, overhaul or modification of live-in recreation vehicles that are designed for travel on a highway but does not include a person engaged in the repair, maintenance, overhaul or modification of the engines and drive trains of those vehicles;

(b) "General Regulations" means the General Regulations under the *Manpower Development Act* (Alta. Reg. 43/77);

(c) "trade" means the trade of Recreation Vehicle Mechanic.

(2) The definitions in the General Regulations apply in this regulation.

PART 1
APPRENTICESHIP AND TRADE TRAINING

2 A person is eligible to be an apprentice in the trade, if he satisfies the requirements of section 5 of the General Regulations, and either

(a) produces evidence of at least a grade 9 education or the equivalent, or

(b) passes the entrance examination prescribed by the Board.

3(1) Subject to subsections (2), (3) and (4), an employer who is a journeyman or who employs a journeyman may employ 1 apprentice and may employ 1 additional apprentice for each additional journeyman he employs.

(2) If the supply of journeymen in a location where an employer is carrying on business is insufficient to permit the employer to carry out his work commitments, the Director may authorize the employer to employ apprentices in addition to those permitted under subsection (1).

(3) The Director may authorize an employer to employ an apprentice, in addition to those permitted under subsections (1) and (2), on a temporary basis to train him in a branch of the trade not engaged in by the employer to whom he is apprenticed.

(4) For the purposes of subsections (1) and (2) an apprentice employed temporarily under subsection (3) shall not be considered to be an apprentice of his temporary employer.

4(1) The term of apprenticeship shall consist of 2 periods of 12 months each.

(2) Each period referred to in subsection (1) shall consist of not less than 1800 hours of on the job training inclusive of time spent attending any technical training course prescribed by the Board.

5 When a contract of apprenticeship is registered with the Director, he shall issue to the apprentice an official record book referred to in section 14 of the General Regulations.

6(1) An apprentice shall not advance to the next period until the Director has authorized him to do so by making an entry in the apprentice's official record book under subsection (2).

(2) The Director shall make an entry in the apprentice's official record book authorizing advancement to the next period, when the apprentice

(a) has completed the previous period of apprenticeship,

(b) has received in the opinion of the Director, a satisfactory report from

(i) his employer, and

(ii) the school at which he attended technical training courses prescribed by the Board,

(c) has completed the tests and examinations prescribed by the Board, and

(d) has attained passmarks prescribed by the Board in the tests and examinations referred to in clause (c).

7 The official record book of an apprentice shall be kept in the possession of his employer and, on termination of the employment of the apprentice, the employer shall present the completed book to him.

8(1) An employer shall pay wages to an apprentice that are not less than the following percentages of the prevailing wages paid to a journeyman:

(a) 55% in the first period, and

(b) 75% in the 2nd period.

(2) Notwithstanding subsection (1), the wages paid to an apprentice shall not be less than the minimum wage fixed pursuant to the *Employment Standards Act*.

(3) An employer is not required to pay wages to an apprentice during the time that the apprentice spends attending technical training courses prescribed by the Board.

9 The hours of work and working conditions of an apprentice shall be the same as those of a journeyman.

PART 2 CERTIFICATION

10 In accordance with section 49(b) of the General Regulations the Director may issue the following classes of certificates:

- (a) Certificate of Proficiency;
- (b) Temporary Certificate.

11 In accordance with section 50 of the General Regulations, the Director may issue a Certificate of Proficiency without examination to a person who holds

- (a) a Certificate of Completion of Apprenticeship in this trade issued by another province within Canada, or
- (b) a Certificate of Qualification or a Certificate of Proficiency in this trade issued by another province within Canada bearing an Interprovincial Standards Red Seal.

12(1) An application to take an examination for a Certificate of Proficiency shall be made to the Director.

(2) Documentary evidence acceptable to the Director shall be presented by an applicant for an examination showing that the applicant

- (a) holds a certificate equivalent to an Alberta Certificate of Proficiency issued by a provincial authority outside Alberta, or
- (b) has at least 3 years of acceptable work experience in the trade.

(3) The applicant shall provide translations into the English language acceptable to the Director, of credentials in a language other than English submitted pursuant to subsection (2).

13(1) The Director may issue a Temporary Certificate to a person if

- (a) that person has complied with section 12,
- (b) the Director has approved the application for examination made under section 12(1), and
- (c) the applicant has attained a mark of not less than 70% of the passmark on the examination prescribed by the Board.

(2) Notwithstanding subsection (1)(c) the Director may, when in his opinion extenuating circumstances warrant such action, issue a Temporary Certificate to a person who has attained a mark of less than 70% of the passmark on the examination prescribed by the Board.

(3) A Temporary Certificate entitles the holder to work as a Recreation Vehicle Mechanic under the supervision of a journeyman.

14 A Certificate of Proficiency issued under this regulation is effective unless cancelled or suspended by the Director in accordance with sections 60 or 61 of the General Regulations or section 48 of the *Manpower Development Act*.

N.L.C. - B.N.C.



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